

## CC8 NDT Test Plan (FAA Review) – Phase II - Overlay

### Pre-Traffic Testing (9/26/17), Post Seating Load (9/29/17) and Post Ramp-Up Testing (10/12/17):

Prior to the start of traffic testing on (9/28/17), the CSRA NDT team will perform the following tasks. Each task will be one time measurement before placing any loads.

1. **SurPro and Dipstick Profilers (9/26/17):** Take longitudinal and transverse profiles using the SurPro and Dipstick profiling devices. Due to the short section length, these profilers will be used in lieu of the NDT Van. This will ensure that the profiles cover the trafficked and non-trafficked areas. The profiles will be used to determine the longitudinal changes in the test section after testing is completed including longitudinal curling. This data can be compared to the data from the embedded sensors. The performance of each joint type will be evaluated and compared between different types.
2. **PSPA (9/26/17):** PSPA testing will be conducted in accordance to the CC8 test plan. The testing will be done to determine the seismic modulus of each section before and after trafficking. This data can be analyzed alongside the HWD and embedded sensor data collected during trafficking.
3. **LWD (9/26/17):** LWD testing will be conducted at  $\pm 15'$  offsets in stations 3+60, 4+45, 5+30, 5+85, and 6+25. This testing will be at the top of subgrade and P-154 layer. This testing will be done to determine the pre-trafficked moduli of the base layers. This data can be compared to HWD data during trafficking. **(Completed)**
4. **HWD (9/26/17):** HWD testing will be conducted following the CC8 test plan. Following the HWD loading conditions for the previous phase, the target loading sequence will be: 4,000 lbs (or close to), 8,000 lbs, and 12,000 lbs with an approximate 12,000-lb seating load. HWD testing will be done to monitor the changes in deflection and modulus during the course of trafficking. **It has been requested that HWD loading be increased to 12,000 lbs, 24,000 lbs, and 36,000 lbs. This request is after the post-seating load testing.**
5. **MIT Scan (9/26/17):** The MIT Scan will be used to verify the dowel bar placement at all of the joints in the CC8 test section. The MIT may also be used to determine the movement of the dowel placements (if any) during trafficking.
6. **Truss Profiler (9/26/17):** The truss profiler will be used in conjunctions with the joint groove profiler to monitor curling across transverse joints and to monitor the performance of joints. Alongside the Joint-Groove Profiler SurPro, and Dipstick, the Truss Profiler can be compared to the other sets of curling data.
7. **ELATextur (9/26/17):** Texture measurements will be taken to monitor abrasion on concrete surface at both trafficked and non-trafficked areas in the trafficked and non-trafficked sections for both the North and Southside in each different test section.
8. **Walk Behind GPR (9/26/17):** The walk behind GPR will be used to determine the transverse layer thicknesses across multiple stations of the test sections. This testing will be done prior to the seating load, after the seating load, halfway through trafficking, and post trafficking to monitor layer thickness changes during the duration of testing including the subgrade layers.

9. **Rail to Rail Profiler (9/26/17):** The rail to rail profile will be used to collect weekly transverse profiles to be used for slab curling and to monitor distresses. The data will be compared against the various other technologies to determine agreement between devices. The performance of each joint type will be evaluated and compared between different types.
10. **12' Straightedge (9/26/17):** Straightedge measurements will be taken in accordance with the attached plan to determine slab movement during trafficking.
11. Prior to the start of trafficking, CSRA will conduct a baseline visual condition survey on the concrete slab surface. The collected inspection data will be uploaded in PAVEAIR database. Prior to the survey, CSRA will establish a suitable database in PAVEAIR in which visual condition data will be entered.

All the collected data except 2D/3D imaging will be stored in the G: drive located in the NAPTF. Data files will be accessible on the G: drive within a week of the measurements.

#### **Testing During Traffic [On-Going]:**

At the end of each day's trafficking, CSRA will perform a visual survey for rigid pavement crack recording in accordance with ASTM D5340. SCI calculation will consider the following distresses in accordance with AC 150/5320-6E: longitudinal, transverse, and diagonal cracking; corner breaks; intersecting cracks and shattered slabs; and shrinkage cracking. The collected data and calculated SCI will be updated daily in the PAVEAIR database by end of the day. The updated SCI will be reported to the FAA as well by end of the day to facilitate go/no go decisions on traffic. The PCN will be used to compare and evaluate the current ICAO overload criterion. The SCI will be monitored to meet the target of 80 for the overload testing. A FOD check will be conducted on the test area after each week of trafficking to determine if any distresses have caused any loose material on the surface of the pavement. Some distresses linked to FOD are corner breaks, linear/transverse cracking, shattered slab, etc, taken from the PAVEAIR user's manual.

HWD testing will be conducted at the same loading levels, sequences, and locations as defined in the pre-traffic testing. 2D/3D image data will be collected with the same conditions as described in the pre-traffic testing. Both HWD and image data collections will be made on a weekly basis during the traffic testing.

All the collected data except 2D/3D imaging will be stored in the G: drive located in the NAPTF. Data files will be accessible on the G: drive within a week of the measurements.

#### **Post-Traffic Testing [4-6 weeks]:**

The CSRA NDT team will conduct visual condition survey on the concrete slab surface. The collected inspection data and final SCI will be uploaded in PAVEAIR database.

The NDT Team will take readings using the PSPA, HWD, Waylink Imaging System, Mobile Profiler, Truss Profiler, and Joint Groove Profiler. All the collected data except 2D/3D imaging will be stored in G drive located in the NAPTF within a week from the measurements.

An analysis of the data will be done to determine the results of the trafficking and to compare to the original goals of the testing. With the data collected, overload criterion will be developed for rigid pavements.

